

In the Claims

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims

1. (Currently Amended) A data driver for driving a plurality of multiple data lines on an LCD panel according to a plurality of multiple channels of pixel data, the data driver comprising:

a digital buffer for receiving and storing the channels of the pixel data, ~~at several times~~ and selectively outputting a channel of the pixel data per ~~[[at a]]~~ time;

a DAC (digital-to-analog converter) for ~~receiving the pixel data output from the digital buffer at several times;~~ sequentially converting the channels of the pixel data output from the digital buffer into ~~multiple~~ a plurality of channels of analog pixel data and outputting a channel of the analog pixel data per time ~~at several times~~;

~~[[an]]~~ a plurality of analog buffer units, each analog buffer unit sequentially ~~[[for]]~~ receiving and storing a channel of the analog pixel data output from the DAC, ~~at several times and for the analog buffer units~~ outputting the channels of analog pixel data stored therein simultaneously at a time; and

an output buffer for receiving the channels of the analog pixel data output from the analog buffer units so as to drive the data lines.

2. (Original) The data driver according to claim 1, further comprising a shift register for commanding the digital buffer to receive the pixel data.

3. (Original) The data driver according to claim 1, wherein the digital buffer includes a first line buffer and a second line buffer; the first line buffer receives and stores the pixel data at several times; when the first line buffer finishes its receiving operations, the first line buffer parallelly transfers all the pixel data stored therein to the second line buffer; and the second line buffer outputs a channel of the pixel data to the DAC at a time.

4. (Original) The data driver according to claim 3, further comprising a line buffer control circuit, and the second line buffer comprising multiple line buffer units, wherein the line buffer control circuit selects one of the line buffer units at a time, and the second line buffer outputs the pixel data stored in the selected line buffer unit.

5-6. (Canceled)

7. (Currently Amended) A data driver for driving ~~multiple a plurality of~~ data lines on an LCD panel according to ~~multiple a plurality of~~ channels of pixel data, the data driver comprising:

a digital buffer for receiving and storing the channels of the pixel data, ~~at several times~~ and selectively outputting N channels of the pixel data per time ~~at a time~~, wherein N is a positive integer greater than 1 and smaller than the number of the data lines;

N ~~sets of~~ DACs (digital-to-analog converters) for receiving converting the channels of the pixel data output from the digital buffer, ~~simultaneously converting N channels of the pixel data~~

into ~~N channel~~ a plurality of channels of analog pixel data, and outputting N channels of the analog pixel data per time;

[[an]] a plurality of analog buffer [[for]] units, each analog buffer unit receiving and storing a channel of the analog pixel data respectively output from the N DACs, at several times and the analog buffer units outputting the channels of the analog pixel data stored therein simultaneously at a time; and

an output buffer for receiving the channels of the analog pixel data output from the analog buffer units so as to drive the data lines.

8. (Original) The data driver according to claim 7, further comprising a shift register for commanding the digital buffer to receive the pixel data.
9. (Original) The data driver according to claim 8, wherein the digital buffer comprises a first line buffer and a second line buffer; the first line buffer receives and stores the pixel data at several times; when the first line buffer finishes its receiving operations, the first line buffer parallelly transfers all the pixel data stored therein to the second line buffer; and the second line buffer selectively outputs N channels of the pixel data to the DACs at a time.
10. (Original) The data driver according to claim 9, further comprising a line buffer control circuit, and the second line buffer comprising multiple line buffer units, wherein the line buffer control circuit selects N line buffer units from the line buffer units at a time, and the second line buffer outputs the pixel data stored in the selected line buffer units.

11-12. (Canceled)

13. (New) A method for driving multiple data lines on an LCD panel according to a plurality of channels of pixel data, the method comprising:

receiving and storing in each of a plurality of digital buffer units pixel data for each of the plurality of channels;

successively converting, using a single digital-to-analog converter (DAC), pixel data from one of the channels at a time;

successively outputting the converted pixel data from the DAC to individual ones of a plurality of analog buffer units; and

outputting, to drive the multiple data lines, the converted data from the plurality of analog buffer units, in a parallel fashion, after each channel of the pixel data has been converted and received by the plurality of analog buffer units.